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(54) Title: HERBICIDE-RESISTANT PLANTS, AND POLYNUCLEOTIDES AND METHODS FOR PROVIDING SAME

(57) Abstract: Described are polynucleotides having nucleotide sequences encoding mutant plant phytoene desaturase proteins that
are resistant the bleaching herbicides that act on phytoene desaturase, and related nucleic acid constructs, plants and methods.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22295

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C12N 15/29,52,82;A01H 5/00 US CL : 435/320.1/536/23.2,23.6/800/278,300,300.1 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 435/320.1/536/23.2,23.6/800/278,300,300.1 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST(USPAT,EPO,JPO,DERWENT); STN(Agricola, Biosis, CaPlus, Embase)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LI, ZHOU-HUI et al, Cloning and characterization of a maize cDNA encoding phytoene desaturase, an enzyme of the carotenoid biosynthetic pathway. Plant Molecular Biology 1996, Vol. 30, pages 269-279, see entire document.	1,15-18,20-25,27,28,30,31,33-36 and 45-47
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 21 March 2005 (21.03.2005)	Date of mailing of the international search report 01 APR 2005	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer: <i>James H. Kruse</i> David H Kruse Telephone No. (571) 272-0547	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/22295

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claim Nos.: 2-14,19,26,29,32,37-44 and 48-51
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Please See Continuation Sheet
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/22295

Box I Observations where certain claims were found unsearchable 1. because they relate to subject matter not required to be searched by this Authority, namely:
Claims 2-14,19,26,29,32,37-44 and 48-51 are unsearchable because they are directed to specific nucleic acid and amino acid sequence, but a usable computer readable form of the sequence listing had not been sent in response to Form PCT/ISA/225 mailed 10 December 2003.

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